



HELP

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HELPFILE

Automatic internet at startup

Q My home PC shows an automatic prompt that asks to connect to the internet as soon as the Windows desktop loads. It seems to be something to do with my Kodak photo software, as its icon appears at the same time. I have looked at the settings of the Kodak software and also the settings related to my internet connection, but I can't determine why this is happening.

Martin Court, martin.court@yellgroup.com

A Far too many programs assume you want them to run every time you start your PC and far too many of these assume everyone has a permanent, high-speed internet connection. They start an internet session to check for updates as soon as they load. If you have a dial-up connection and are not currently connected to the net, this request attempts to make a dial-up connection. Since many programs load at startup, almost at the same time, you can't be certain it is caused by the Kodak software. It might be a program that loads immediately before it. There is no simple utility that tells you which program is attempting to start an internet connection, either. But there are two ways to identify the culprit, and we suggest you use a combination of both.

The first method is to use a firewall program to monitor which programs are attempting to make internet connections. The Windows Firewall does not do this, but there are plenty of free alternatives, such

as ZoneAlarm, which is on this month's cover disc. There are also many commercial internet security programs that tell you which program is trying to connect and allow you to accept or deny the request. Many people suffer from spyware programs that sneak on to their PCs and try to 'phone home', so we recommend such a firewall on every computer with any kind of internet connection.

The second method involves running Msconfig. You can use this program, which is built into Windows, to identify and disable programs that start automatically when Windows is started. Click on Start, Run and type msconfig. This opens the System Configuration Utility. On the Startup tab you will see a list of programs that run automatically. Most of these programs are not needed, slow down the startup process and use up memory, thus slowing down your computer. Go through the list identifying each program. The culprit might be on the Services tab, so check there, too.

Since many programs and services on this list have cryptic names, you should use a guide such as Pacman's Start-Up list at www.sysinfo.org. This explains which settings can be removed and which are best left alone. Alternatively, click Disable All and see which you miss. Be aware that many 56K modems require a program to run on startup and this might have an obscure or suspicious name such as Ptsnoop, which is used by PCTel modems; confusingly, at least one Trojan has also used this filename.

Problems when clicking mail links

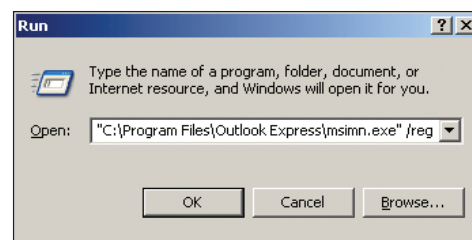
Q When using Outlook Express, I often find a relevant email address in the message received. When I click this, it asks me to choose a profile and shows Outlook as my profile. When I click OK, I am told: "The MAPI spooler could not be started. Close and then restart all email enabled applications. MAPI 1.0 (000004C7)." What do I do? Shouldn't clicking on an address automatically open the Create Message screen?

Alex Bennett, alex@bennett1962.fsnet.co.uk

A You would expect an email program such as Outlook Express to know that it should open a new message window. It doesn't because it uses Internet Explorer to display HTML-formatted emails. So when you click an email link, it uses Internet Explorer's settings for the mail-handler program.

It looks as if you normally use Outlook Express but you also have Outlook, part of Microsoft Office, installed on your system. For some reason Outlook, and not Outlook Express, has been made the default mail handler. But since it has never been set up, you are asked to choose a user profile. To fix this, you need to register Outlook Express as the default mail handler.

In theory, you can do this from Outlook Express or from Internet Explorer. In Outlook Express, select Tools, Options and look on the General tab for Default Messaging Programs. Alternatively, select Tools, Internet



▲ Register Outlook Express as your default mail handler via the Run command

Options from Internet Explorer, select the Programs tab and choose the email program.

Sometimes neither of these methods works. If you still have the problem, close both Outlook Express and Internet Explorer. Click on Start, Run and then click the Browse button. Navigate to C:\Program Files\Outlook Express and select the program MSIMN.Exe. Click the Open button, which will take you to the Run box. Move the cursor to the end of the command that appears and add a space followed by /reg. Then click OK. This should register Outlook Express as your default mail handler. You might need to restart your computer before this takes effect. If this does not work, read the Microsoft Knowledge Base article 306098 at <http://support.microsoft.com/?kbid=306098> for more suggestions.

Specifying program startup order

Q When booting up my computer I notice that the various programs that load automatically, such as McAfee, Outpost Firewall, Ad-Aware, DSL modem and Volume Control, never load in the same order. They appear in a different order in the right-hand side of the taskbar. Very often, the firewall is loaded last of all. I would feel more secure if I knew that the firewall and anti-virus software were loaded before the DSL modem, thereby reducing any time in which my computer might be vulnerable to attack. Is there a way in which this startup order can be set?

Steve Heal, st3v3.heal@btinternet.com

A You have made an interesting observation. Windows does not guarantee the order in which these startup icons appear. When Windows starts, it processes various sections of the Registry and startup folders in a set order shown below and issues the commands to start each of these programs. But each command runs as a separate 'thread' and some programs are quicker to load than others.

Since the commands to start the programs are issued in quick succession, the speed they load, which is largely due to the size of the program, determines about the order in which programs appear on the taskbar, though we don't see why it should change on one system. In most cases, this won't be a problem. Any well-implemented anti-virus program or firewall runs as a service, and services are always loaded before Windows allows users to log in and before regular programs are started automatically. What you see loading is simply the user interface part of the program, a separate task that is needed to communicate with the service. Protection is in effect from the moment the service starts running, even though you have no visual confirmation that it is doing its job.

On some occasions, the startup order of programs does matter. For example, we find it annoying when

the Gmail Notifier tries to check email from a notebook computer before the wireless adaptor has figured out which network it is connected to. Gmail gives an error. A program called RegRun, from <http://gratis.com/security/startuporder.htm>, allows you to specify delays before certain programs start. Similar programs are available at www.autostartmanager.com and www.pcfaster.com. You can do something similar yourself by creating a batch file that pauses for a while before loading a program. However, you need to be careful. Many batch files use the old MS-DOS Choice command to create the delay. Since this was written for single-tasking DOS, it uses up 100 per cent of the processor's time while waiting. That makes it unsuitable for delaying multiple startup tasks.

To insert a delay into batch files without hogging processor power, you could try using the ping command to send one packet to a non-existent IP address. We use 192.168.123.45 as this address doesn't exist on our local network. The command waits for a reply for the time specified in milliseconds. Save the following three lines as C:\Windows\delay.bat.

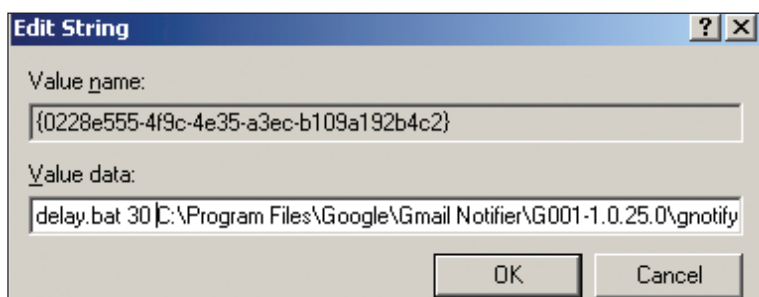
```
@echo off
PING 192.168.123.45 -n 1 -w %1000 >NUL
%2
```

You can then use the command 'delay.bat 10 prog.exe' to create a 10-second pause before running the program prog.exe. In the screen below, we've edited the Registry key that runs the Gmail Notifier, found under HKLM, Software, Microsoft, Windows, CurrentVersion, Run, and added 'delay.bat 30' at the front.

You might find that adding delays causes your computer to start up faster. Loads of programs add items to the startup list, many of which don't need to be there. When these all try to load at the same time, your hard disk can go crazy trying to cope with requests to read from different areas of itself simultaneously. By loading the programs sequentially, you can reduce the drive head movement.

WINDOWS STARTUP SEQUENCE

1. BootExecute (HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\BootExecute)
2. Services
3. User enters a password and logon to the system
4. UserInit (HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon\UserInit)
5. Shell (HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon\Shell)
6. All users RunOnce (HKLM\Software\Microsoft\Windows\CurrentVersion\RunOnce)
7. All users Run (HKLM\Software\Microsoft\Windows\CurrentVersion\Run)
8. All users RunOnceEx (HKLM\Software\Microsoft\Windows\CurrentVersion\RunOnceEx)
9. All users RunEx (HKLM\Software\Microsoft\Windows\CurrentVersion\RunEx)
10. Current user RunOnce (HKey_Current_User\Software\Microsoft\Windows\CurrentVersion\RunOnce)
11. Current user Run (HKey_Current_User\Software\Microsoft\Windows\CurrentVersion\Run)
12. Current user RunOnceEx (HKey_Current_User\Software\Microsoft\Windows\CurrentVersion\RunOnceEx)
13. Current user RunEx (HKey_Current_User\Software\Microsoft\Windows\CurrentVersion\RunEx)
14. Common startup folder
15. Startup folder



◀ Creating a delay before certain programs start can improve your system's startup time

Your Experts

HELPFILE

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Paul Mullen

With 27 years of PC experience as power user, programmer and IT consultant, Paul Mullen answers all PC problems, tackling hardware, system and security issues.



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SOFTWARE HELP

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Kay Ewbank

Database developer and productivity expert Kay Ewbank offers help with office applications.



Ben Pitt

Professional musician and photo enthusiast Ben Pitt gives advice on using creative software.



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BUYING HELP

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Tom Royal

Labs Editor Tom Royal recommends the best products for your specific requirements.



David Ludlow

If the product you need exists, Reviews Editor David Ludlow knows where you can buy it.



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BUSINESS HELP

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Web developer and security expert Simon Edwards provides IT solutions to your business goals.



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Please contact the relevant department at the email address listed above. You can also write to us at:

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Please try to give full details of your problem. We need an email address or daytime and evening telephone numbers in case we need more information.

Although the policy of Computer Shopper is not to publish readers' email addresses, we include them in Help so that other readers with experience of similar problems can share their solution (please also cc any comments to the relevant Help department above). If you would prefer not to have your email address published, please say so.

Switching broadband service

Q I am having a lot of trouble with my ISP. I joined E7even about 18 months ago, and all went well until October 2005, when I often found I was unable to access the server, particularly at weekends. Things got steadily worse until this January, when my service stopped completely and hasn't resumed since. I decided to cut my losses and get another ISP. Unfortunately, there is a mark on my telephone line that states I already have broadband and BT won't remove it. Other ISPs are happy to let me have their service, but without the migration authorisation code (MAC) they feel they can't provide it. E7even doesn't respond to emails or telephone calls, and has a recorded message that asks you to leave any queries you have. I have had no response in three weeks. Apart from trying a new telephone line, how can I get another provider?

Peter Chapman,
ronald.denbyjones@ntlworld.com

A Many E7broadband users have reported similar problems, though others have been satisfied. Whenever we tried it, the E7broadband network status page www.e7broadband.com/networkstatus.html had a big red X against ADSL network.

You can't have two different ADSL services running on one line. It is up to the ISP, which sub-contracted with BT Wholesale to provide the local ADSL service, to tell BT to turn it off. If

e7broadband																											
Broadband Home Packages Features Sign-up FAQs		Network Status You will find the latest status on the various E7even services and networks here, together with notices of planned maintenance and updates on the progress of resolving any current system problems.																									
Member Services Username: Password: [Login] Forgot password?		<table> <tr> <td>POP3 Email server used for retrieving your email</td><td>✓</td><td>SMTP Email server used for sending your email</td><td>✓</td></tr> <tr> <td>Web server used for running your website</td><td>✓</td><td>RADIUS Server used for logging on security</td><td>✓</td></tr> <tr> <td>Primary DNS server used for resolving other server locations</td><td>✓</td><td>Secondary DNS server backup to the primary DNS server</td><td>✓</td></tr> <tr> <td>Online games server used for playing multiplayer games</td><td>✓</td><td>ADSL broadband network</td><td>✗</td></tr> <tr> <td>0845 dial-up network</td><td>✓</td><td>NNTP News Server usenet newsgroups access</td><td>✓</td></tr> <tr> <td>Incoming Support Lines</td><td>✓</td><td></td><td></td></tr> </table>		POP3 Email server used for retrieving your email	✓	SMTP Email server used for sending your email	✓	Web server used for running your website	✓	RADIUS Server used for logging on security	✓	Primary DNS server used for resolving other server locations	✓	Secondary DNS server backup to the primary DNS server	✓	Online games server used for playing multiplayer games	✓	ADSL broadband network	✗	0845 dial-up network	✓	NNTP News Server usenet newsgroups access	✓	Incoming Support Lines	✓		
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General Terms Privacy Policy Code of Practice Contact																											

◀ E7broadband's ADSL network didn't appear to be working when we tried it

you sign up with another ISP it will find that your line is 'tagged'. It can't provide a service to your phone line until E7even relinquishes it. In fact, some users find they cannot set up a new ADSL service even when there is no current ADSL provider, because a previous provider (perhaps serving the previous home owner) has accidentally left a tag on their line in the BT records. In these cases, Ofcom will help get the matter sorted out. See www.ofcom.org.uk/complain/internet/tag.

The best way to switch to another provider is to be persistent in contacting E7even and tell the company you wish to migrate. Eventually it should give you the MAC, which your new ISP needs to tell BT to divert your ADSL service. E7even has acknowledged a period of problems,

and sent an email to customers saying that anyone requiring a MAC number for migration will be provided with one. Unfortunately, it seems so many E7even customers have had problems that the customer service department has been swamped with calls and there has been a delay in issuing MACs.

Ofcom has had so many complaints about this matter that it has posted a web page about E7even problems at www.ofcom.org.uk/complain/internet/e7even. Ofcom suggests that if you have followed E7even's complaints process without success, or if your dispute with E7even has been going on for more than 12 weeks, you should contact the Office of the Telecommunications Ombudsman (OTEL) at www.otelo.org.uk.

Norton AntiVirus Windows Installer problem

Q I have encountered a problem with my notebook, which unexpectedly crashed. I had no alternative but to shut it down, and after a short period I rebooted it. During startup, a screen message informed me that Norton AntiVirus was no longer functioning and should be uninstalled and reinstalled. I hasten to add that my subscription is fully paid up with 10 months still to run.

I have tried four times to reinstall without success. The CD completes the pre-installation check of my computer's files and reports no corruptions, but part-way through the installation the program reports a problem that prevents it completing. There is no explanation as to why, and I am unable to fix it. A further message advises that Windows Installer is missing. Naturally I am concerned that my hitherto well-protected PC is vulnerable to virus attack.

My notebook was supplied with Windows XP already installed and I have no means of finding the missing file. I have visited Microsoft's website, but have been unable to find anything that I think would be helpful. It appears impossible to contact Microsoft to let the company know about my predicament. What do I do?

David Williams, davidnjudyann@aol.com

A This problem has several possible causes. It might have been caused by a temporary glitch that caused file system corruption, or there might be a hardware problem such as bad memory or a dodgy hard disk. It might even be caused by spyware or a virus, and unfortunately there are lots of nasty programs that disable anti-virus software. Finally, it might just be a bug in Norton AntiVirus.

You should first investigate the possibility that a virus or some spyware is causing this problem. To do this, run an online anti-virus scan. Both www.f-secure.com and <http://housecall.trendmicro.com> have excellent free scanners. F-Secure runs on some systems that Trend cannot, but it won't remove any viruses it finds.

After scanning, download and install Microsoft's AntiSpyware from www.microsoft.com/security and the free 14-day trial version of Ewido from www.ewido.net. Install both these applications and update them, but don't scan your computer yet. Instead, reboot the computer into Safe Mode by pressing F8 repeatedly during the short gap between the BIOS boot screen and the first Windows screen. Scan using these programs when Windows is running in Safe Mode.

If this does not help identify what's going on, check for hardware problems. You can run Chkdsk to check the hard disk and scan its surface for

problems. Then run a memory test. Microsoft provides a free memory tester at <http://oca.microsoft.com/en/winddiag.asp>.

Norton AntiVirus seems to have a few problems with the Windows Installer. Windows Installer comes with Windows XP, but has been upgraded since the operating system was first released. The current version is 3.1. If you have installed every Windows update, you should already have the latest version but if not, you can download it from www.microsoft.com/downloads. It seems the Installer itself is fine but some of the files it creates, which hold details of past installations, are corrupt or missing.

Sometimes Norton products can be a pain to reinstall after they have become corrupted. If there is no virus or hardware problem, we suggest you completely remove and reinstall Norton AntiVirus. You shouldn't lose the time you've paid for on your subscription, but just in case it's wise to make a note of your product activation key first. Uninstalling from Control Panel Add/Remove Programs might not remove every component, so after uninstalling as much as you can, download and run a tool called SYMVRT from the Symantec website. Use Google to search for its current location as Symantec's own website search does not seem to work properly. Then see if the software reinstalls without problems.

What's the partition limit?

Q In *Helpfile*, *Shopper* March 2006, you advise against creating a FAT32 partition larger than 63GB, and I'd like to know why. I have a digital camcorder and an hour's worth of uploaded AVI video consumes about 13GB of disk space. At the moment, I have a 160GB disk with a 117GB partition that contains about nine hours of video files. I'm down to about 400MB of free space, which is why I've bought a new 250MB disk to replace the 160GB disk.

My plan was to increase the size of the relevant partition to the maximum I could make it, which I guess would be about 202GB. My PC dual-boots between Windows Me and Windows XP, so I am using FAT32 for compatibility. I've not seen any problems with this partition so far. If having a FAT32 partition greater than 63GB is likely to cause problems, I need to rethink my plans. Why did you say 63GB is the limit?

Steve Webb,
steve@webbsfamily.freemove.co.uk

A As you are probably aware, FAT32 divides the hard disk space up into clusters. The limits on partition size are a combination of the maximum cluster size and the maximum number of clusters. On small drives less than 8GB, FAT32 uses 4KB clusters (eight sectors). For drives higher than 8GB but less than 16GB, FAT32 uses 8KB clusters (16 sectors). For drives that are over 16GB but less than 32GB, FAT32 uses 16KB clusters (32 sectors). For file systems over 32GB in Windows Me, the cluster size is 32KB

(64 sectors). The theoretical maximum cluster size is 64KB (128 sectors), because this is the largest power of two that will fit into an eight-bit unsigned integer. However, lots of programs assume a cluster won't ever be larger than 32KB. Microsoft recommends, and will only support, a maximum cluster size of 32KB.

The reason FAT32 adjusts cluster size like this is for efficiency purposes. Small clusters are more efficient at storing files. If you store a small file of just a few hundred bytes long, as most files on most Windows systems are, the file system still has to allocate a whole cluster to the file. Large clusters end up containing wasted space. But the more clusters there are, the larger the file allocation table (FAT) has to be. This uses 32 bytes for each cluster. By increasing the cluster size, FAT32 limits the maximum number of clusters to about two million. This gives each FAT a maximum size of 64MB.

While Microsoft has stated that FAT32 supports drives of up to two terabytes in size, this is a theoretical limit as there aren't any drives that large to test it on. In fact, for a long time after FAT32 was introduced, most computers only supported IDE drives less than 8GB. The IDE specification only supported addressing drives less than 128GB. Windows XP will not allow you to format a FAT32 partition larger than 32GB, although Windows 98 can format volumes of up to 127.53GB. This limits the maximum number of clusters to 4,177,918. Several documents on the Microsoft Developers Network state this as the maximum number of clusters on a FAT32 volume. Windows Me and third-party utilities can format larger FAT32

volumes. If you format a 250GB drive with a single FAT32 partition, you will end up with about eight million clusters and each FAT will occupy 256MB.

However, many programs, such as ScanDisk and Defrag, need to read the entire FAT into memory, and they may run out of memory with such a large FAT. Worse still, if the programmer assumed there would never be more than 4,177,918 clusters, as Microsoft has stated, programs can start overwriting data. We have seen cases where ScanDisk crashed and corrupted the drive when accessing very large FAT32 drives. On examination, parts of the FAT had been overwritten by data that should have been elsewhere in the FAT. Such crashes are likely to occur when using FAT32 partitions larger than 128GB. To be safe, you should stick to a maximum of 64GB.

Of course, it is also possible the crashes were caused by third-party formatting utilities that may have inadvertently broken Microsoft assumptions. For example, they may format partitions bigger than 63GB using a 64KB cluster size. We recommend that you don't format any FAT32 partition with a cluster size larger than 32KB (64 sectors), and don't exceed 4,177,918 clusters. This gives a maximum partition size of just under 128GB. It is safer to stick to a maximum of just under 64GB, which gives you a little over two million clusters.

In any case, FAT32 is unsuitable for storing large video files. You stated that an hour of video can occupy 13GB, but FAT32 has a maximum file size of just under 4GB. To store larger files, you must use NTFS.

Can I connect several hard disks?

Q For some years I have been an amateur film maker using a digital camcorder. After the film production stage, having spent so many hours working on the final production, I couldn't bring myself to erase the various AVI files and edits. When I wanted to make a new film and didn't have sufficient hard disk space, I would buy a new disk.

I now have several hard disks holding films that I don't have the heart to erase. In the years before DVD, I exported them to tape. But I want a system into which I can plug all my hard disks. Then I can turn each one on and convert from tape to DVD, or take various clips to make a compilation. Is there a system available that will take six hard disks?

John Cook, john.cook17@ntlworld.com

A We will assume these are parallel IDE (also known as ATA) drives. These are not inherently hot-swappable; you cannot just turn drives on and off without switching the whole computer off first. Most systems would also have problems if they all powered up at the same time. Hard disks take their highest current when first powering up. SCSI drives, which are used in servers, have the

ability to power up only when told to do so by the server, which allows a server with many hard disks to power them up a few at a time. Unlike SCSI or SATA drives, the maximum ATA ribbon cable length of 18" does not allow them to be housed in an external case.

If you have a hefty power supply, you could place six IDE drives in a single computer. Check the maximum current on the 12V rail against the startup current drawn by each drive to find out if this will work. Motherboards are usually limited to four IDE devices, and a couple of those will normally be used for CD or DVD drives. You could add a Promise IDE card to support four more drives, but it would be a challenge to fit all the drives, supply them with sufficient power and keep them cool, so it isn't recommended.

You could use removable IDE drive trays to help slot drives into a PC as you needed them. Each drive fits into a protective caddy and that caddy then slots into a drawer in the front of the computer. The limitation is that for most of these trays, you have to turn the computer off to swap the drives. There are some expensive and hard-to-find devices that add hot-swap capability, including the Vision BR-IDE35, which allows you to hot-swap five IDE drives, but this is mainly intended to build RAID arrays. You could use a network storage device instead. These

accommodate one or two large hard disks and are accessed over the network so they are relatively slow.

The best solution is to connect your drives as external USB2 or FireWire devices. These devices can be hot-swapped, provided you use the taskbar icon to stop each device before removing it. The original USB standard, with a maximum bandwidth of 12Mbps/s, was too slow for hard disks, but USB2 is almost as fast as an internal drive, offering 480Mbps/s. For comparison, an ATA100 drive interface gives a maximum bandwidth of 100MB/s (800Mbps/s). This is clearly faster, but it is sustained only for short periods. The sustained data transfer rate, which is limited by the rotational speed of the hard disk, is far less so you will notice little difference between USB2 and ATA100.

You can get cheap external USB2 cases in which you can put your existing drives. The case will protect your drives from being knocked around, which is always a concern if you are swapping bare drives. USB2 cases range from £15 to £40 including VAT. Search <http://froogle.google.co.uk> for multiple suppliers. However, beware of some cheap external cases that claim to be USB2-compatible. These might be USB1.1 devices, which are still compatible, but slower.

How do I access my files wherever I am?

Q I have a PC with a Pentium 4 processor and over 512MB of RAM, but it has become redundant since my girlfriend and I bought notebooks. I would like to put it to some use, though. I thought about using it as a storage device that can be accessed by both notebooks and, if possible, by any PC I use when we are away from home. Which software should I buy, and is there a security risk in leaving the desktop online attached via my Buffalo AirStation G54 High Power wireless router?

Marcellus Archbold,
marcellus305@netscape.net

A You don't need software to access files on your desktop PC over a local network. Just turn on Windows networking and share the folders to which you want access. Your router firewall prevents access from the web, and you can configure wireless security to allow just specific MAC addresses so that only your notebooks can access the wireless network. For more on file sharing, see *Advanced Windows* on page 226.

There are also plenty of ways to access your computer remotely from the internet, and some are free. Which one you choose depends on what you want to do, how secure you need to make it, and how easy you need it to be to set up. If you want to access your computer remotely, do you need to be able to see what's on its screen from a remote location, or do you just want to be able to access files on it?

Second, how important is it that no-one is able to eavesdrop on your session? In theory, the internet is an insecure network. Someone with access to any of the routers between you and the remote computer could see the content of what you type or read. For example, if you connect via a WiFi hotspot, it is possible someone there could eavesdrop on an unencrypted session.

If you will be dealing with confidential company information, you need a secure communications channel such as that provided by a virtual private network (VPN). When you connect using a VPN, your remote computer becomes part of your local network. The difference is that the network speed is limited by the connection you are using. The traffic between your computer and the local network is encrypted. If you need a VPN, consider using

one of the broadband routers available, such as the Linksys BEFVP41, that include a VPN server.

Traditional remote access programs have two connection problems to overcome. First, your home broadband connection almost certainly has a dynamic IP address, which could change without notice. A fixed IP address, if offered, is usually more expensive. Although the IP address of your computer could stay the same for months at a time, it always seems to change when you are away from home and urgently need a file. You should set up a free account with DynDNS (www.dyndns.org). Register a sub-domain address with this site, such as helpfile.dyndns.org, and install a small application on your computer. This checks the IP address periodically and, if it has changed, informs DynDNS. Second, your router has a built-in firewall that is designed to allow computers on your network to connect to the internet while preventing users on the internet connecting to your computers. You need to tell the firewall to allow incoming connections on certain ports and send them to a particular computer. That computer must be set up on your local network with a fixed IP address such as 192.168.1.2.

To avoid both these problems, there are several web-based systems that are convenient to use and easy to set up. They charge a monthly or annual subscription. Once you set up an account, you install an application on your desktop PC, which communicates with the company's server. Because the session originates from your desktop computer, there are no firewall or IP address problems to address. You connect to the central server from a remote location and log into your account. The central computer connects you to your PC. These services also encrypt transmissions in a similar way to VPN connections. Best-known and easiest of these services is GoToMyPC (www.gotomypc.com). It is expensive, at around £11 per month or just over £100 a year. LogMeIn (www.logmein.com) is similarly priced, though it also has a limited free version that lacks the file sharing and remote printing features. If you just want to share files over the internet, there are subscription-based services such as BeInSynch (www.beinsynch.com) that keep designated file folders synchronised for around £4 per month.

If you just want to share files between your desktop and notebook computers, a service called FolderShare (www.foldershare.com),

recently bought by Microsoft, is currently being offered for free. However, it does not use a central server so you still have to deal with firewall configuration and dynamic IP issues. If you are going that far, you may as well set up your own File Transfer Protocol (FTP) server.

FTP is often used to upload and download files to and from web servers. We use a free, open-source FTP server called FileZilla (<http://filezilla.sourceforge.net>). You can configure this to require both a username and a password to access files. We would change the default FTP port to a non-standard, high-numbered port such as 54321, as this makes it harder for hackers to spot that you are running an FTP server. Once you have installed FileZilla and set it to use the non-standard port, test it over the local network. Then set your router to pass those ports through to the computer running the server. Test again, this time using the external IP address of your router, or a DynDNS address if you have set one up. You can then access your files from any web browser by typing an address such as <ftp://myhome.dyndns.org:54321>.

If you want a free remote desktop application and you don't mind setting it up, or the possible security issues, there are several choices. If your desktop is running Windows XP Professional you can use Microsoft's Remote Desktop, which can be accessed by a computer running any version of Windows. However, it runs only on port 3389, which makes it a likely target for hackers. There is a useful article on how to configure it at www.microsoft.com/windowsxp/using/networking/expert/northrup_03may16.mspx. For added security, you can pass Remote Desktop through a secure channel using a free program called Zebedee (www.winton.org.uk/zebedee). However, this may lead to performance issues.

Apart from that, the best-known remote computing program is VNC, developed by AT&T Labs and now known as RealVNC. Most people prefer to use one of the improved versions, TightVNC or UltraVNC. However, there are security weaknesses. The original VNC had poor password encryption, unless you combined it with encryption using an SSH tunnel such as Zebedee.

We prefer a program called Remote Administrator from www.radmin.com. This has built-in encryption and a secure method of exchanging password information, but is still faster than most versions of VNC. It costs just \$35 (around £20) for use on two computers.

Where have my cookies gone?

Q I have experienced a problem with Internet Explorer 5.5 closing down automatically just after logging into Gmail. The problem is linked to the free version of ZoneAlarm. Gmail's answer to this problem is to go into Internet Explorer (IE) tools and delete all cookies. This works, but it's a bit tedious. I thought a simple batch file should do the trick and delete all files in the Temporary Internet Files folder. Using command line instructions, I can navigate to Temporary Internet Files, but once there, dir

shows there are no files. So where have all the temporary internet files gone?

Egils Praulitis, egils.praulitis@gmail.com

A Let's leave aside the question of why you aren't using IE 6 or, better still, Mozilla's Firefox, which would solve this problem. You have discovered the weird way in which Windows Explorer handles Internet Explorer-related folders. Certain folders have a hidden file called desktop.ini, which tells Explorer to display the files in a special way. For example,

when you click on your Windows\Fonts folder, it displays the fonts' details instead of the list of files. IE makes extensive use of this feature. When you click on the Temporary Internet Files folder, Explorer does not display the contents of that folder but a list of cookies, but the cookies aren't stored in that folder. That's why you can't see them. Cookies are stored in a folder called Documents and Settings\username\Cookies for Windows 2000 and XP, and in Windows\Cookies or Windows\Profiles\username\Cookies for older versions of Windows.

Does ZoneAlarm spy?

Q There is a news story at www.theinquirer.net claiming that ZoneAlarm is spying on its users. This is a lot worse than Sony and its CD rootkits. This is the Security Suite; God knows what Zone Labs has done to its free firewall.

*Tim Woodman,
timwoodman10@blueyonder.co.uk*

A The Inquirer article refers to a report in Robert X Cringely's column from *InfoWorld* magazine. Some of the secrets he reports are true, while others are exaggerated. In this case, it is true that ZoneAlarm 'phones home' and this has caused the paranoid to make all kinds of speculation about what data it might be communicating.

However, a later Inquirer article (www.theinquirer.net/?article=29254) reports that, like many other programs, it is simply checking for updates. This is normal, and important to ensure that you are protected against new threats. We cannot find any evidence that it is doing anything else that could be considered sinister or intrusive.

Do I need a paging file?

Q I own a Compaq Presario SR1340 with an Athlon 64 3200+ processor and, originally, 1GB of DDR PC3200 RAM. Thanks to a friend's expired computer, I am also the proud owner of an additional 1GB of Corsair RAM, installed and seemingly working fine.

I must confess I am not sure what advantage there is in having 2GB of RAM, though. What is your recommendation for virtual memory settings? Microsoft's guideline of 3GB minimum and 6GB maximum seems absurd. I note in Task Manager that a large 400MB chunk of the page file is still in use. I would have thought that the RAM would be a better place to put this data, though I understand RAM allocation is more complex than that.

I use my PC for a variety of tasks, from office work such as word processing, spreadsheets and simple CAD through email and internet access to games such as Microsoft Flight Simulator 2004 and Need For Speed: Most Wanted.

Steve McQueen, stmccq@tiscali.co.uk

A The purpose of a paging file, also called a swap file, is to allow Windows to behave as though it has more memory than it really does. This is called virtual memory and is achieved by keeping only the data that is immediately needed in physical RAM, and swapping other pieces of data to an area of the hard disk known as the paging file. The processor has special hardware support for memory paging, so when an application refers

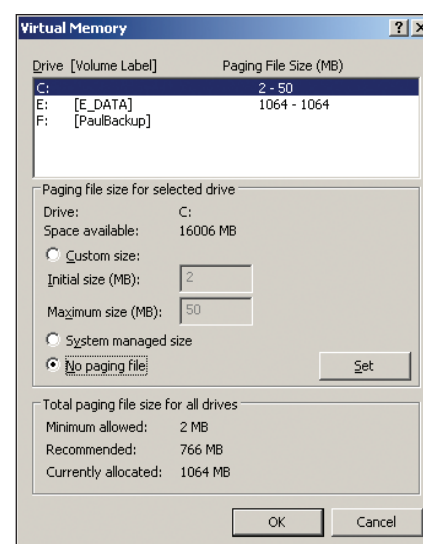
to a particular virtual memory address, the processor can look up where that data is held. It will check in the RAM and call the paging manager to see if the data has been stored in the swap file on the hard disk. When a program tries to access memory that has been swapped out to hard disk, the operating system loads it back into memory. Applications think all the programs are in RAM all the time.

There is no performance gain in using part of your RAM as a RAM drive and trying to put the swap file on that drive. That tip makes sense only for older versions of Windows, where there were definite limits on the amount of memory that could be handled. It is much better to keep the memory available for direct use by programs. If you are going to use a paging file, it should be at least as big as the installed RAM. This is because the paging system will attempt to write out memory to the paging file during idle time. When it needs to put another page of memory in the swap file, it may have already done so. This is why you see some of the paging file in use even though you have plenty of free memory.

Even though the operating system attempts to use idle time to copy memory to the swap file, this activity still causes the computer to slow down slightly. You may want to disable the paging file altogether. However, this could cause problems with certain memory-hungry applications. Adobe Photoshop, in particular, demands virtual memory. Other applications may give strange "out of memory" error messages. Windows may crash if you run out of memory. Windows XP requires a page file if you have Fast User Switching enabled. You also need

it if you have Windows set to create a memory dump file if it crashes.

Microsoft strongly recommends that you don't disable or delete the paging file. It doesn't even include an option to disable virtual memory in Windows XP. If you insist on disabling it, you must set 'No paging file' on every hard disk partition. To do this, right-click on My Computer, choose Properties then click on the Advanced tab. Under Performance, click Settings, then click on the Advanced tab again. Under Virtual Memory, click on the Change button, select No Paging File and click Set.



▲ Swap files allow Windows to behave as though it has more memory than it really does

Feedback Proxy server problems

✉ I read a letter in *Helpfile*, *Shopper* March 2006 regarding a proxy server problem and wanted to ask about a related problem at a customer's site. For years, the customer had been accessing the internet through a proxy server on their LAN. Eventually I was asked to replace this with a modern NAT router, which I did. I went around all the Windows XP workstations and removed the proxy settings from the Internet Explorer connection panel, and everything seemed fine – except that Microsoft Update wouldn't work. This was clearly a proxy problem, because if I switched the old proxy box back on it worked again, though admittedly very slowly.

After a lot of digging around, I came across references to the command-line program `proxycfg`. I executed this command and it revealed that a proxy was still set. Using the `d` modifier (`proxycfg /d`) removed this hidden proxy setting, and all was well. So not everything shown by that slick GUI is the truth.

Mark Pattison, wm.pattison@ukonline.co.uk

A Horrible, isn't it? The Windows Automatic Update in Windows XP operates independently of Internet Explorer. It uses Windows HTTP Services (WinHTTP) to scan for available updates and the Background Intelligent Transfer Service (BITS) to download these updates. These run under

Local System rather than under a user account. Microsoft claims that Internet Explorer's proxy settings are part of each user's settings so don't apply to the Local System account.

Windows Update attempts to discover the proxy server itself, using Windows Proxy Auto Detect, and looks to see if Internet Explorer has a proxy set. It can then copy the setting from Internet Explorer. Alternatively, the setting may have been specified using `proxycfg` in the first place. However, even if WinHTTP reads the setting from Internet Explorer, it won't change its settings automatically when Internet Explorer's proxy settings change. As you found, you have to use `proxycfg` to delete the setting that Windows didn't tell you it was making. ☹